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## **SUGGESTED SPECIFICATION FOR RICKARD ELECTRONICALLY CONTROLLABLE VSW & VRW1 VARIABLE GEOMETRY VAV SWIRL DIFFUSERS:**

Supply and install Electronically Controllable model VSW or VRW1 Variable Geometry VAV Swirl ceiling diffusers as manufactured by Rickard Air Diffusion, (Pty) Ltd. Cape Town, Republic of South Africa.

Each diffuser shall be driven by means of a stepper actuator capable of infinitely varying the supply of conditioned air into the space by means of regulating a variable aperture damper, known as a control disc between minimum and maximum position, vertically within the diffuser. Supply air from the variable geometry diffusers will discharged horizontally in a 360° swirl pattern and will maintain constant air movement in the space throughout the range of volume variation from 100% down to 30%. Maximum damper limits shall be electronically adjustable as desired.

Each diffuser shall be fitted with Multi loop Modular controls for easy slave to master upgrades or downgrades onsite. Master upgrade options shall be onboard, remote wired sensing or remote wireless sensing as required. Airflow sensing, top-up heating (with or without airflow cut-outs) and occupancy sensing shall be upgradeable options as required. All options shall also be factory fitted.

Only one cable that supplies power and communication shall be allowed between each diffuser. Each inter-diffuser cable shall be linked in a daisy chain manner between an interface box fitted to the back of each diffuser. All inter-diffuser cables shall be fitted with rugged automotive grade mini-fit molex connectors and be a minimum of 8m unless otherwise specified. Maximum diffuser control cable length for each power supply module shall not exceed a total of 150 meters. Power supply units shall be capable of supplying a minimum of 15 diffusers. Up to 4 Power Supply Units and 60 diffusers shall be accessible through one Master Communications Unit (MCU). Multiple MCU's shall be daisy chained together as required. Each MCU must be addressable and be BACnet (TCP/IP, MSTP) or LonWorks compatible. Free MLM diffuser management and commissioning software shall be supplied for the adjustment of all diffuser settings, upgrades, building management and commissioning. MLM software must be PC compatible through a USB or MCU device.

The diffuser shall have a detachable back pan so that access to all moving parts from below the ceiling is possible. Volume flow measurement is possible by electronically driving the diffuser damper fully open through the MLM software. Flow measurement is then possible with a flow hood or airflow measurement device fitted and calibrated to the diffuser. All diffusers shall carry the manufacturer's 2-year warranty.

### DIRECTORS

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